VIEW POINT

BLOCKCHAIN

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Introduction

In banking and finance industry, the key transaction is to justify asset ownership and asset transfer. For settling transactions, data messages are exchanged between institutions which more often than not include a 'trusted' intermediary. This introduces the CIA triad problem of Confidentiality, Integrity and Availability. The result of which is a complex interconnected process which relies on exchanging data or messages.

Confidentiality – ensure data privacy to prevent sensitive information from landing at wrong hands while ensuring that right people get the desired data.

Integrity - maintaining consistency, accuracy, and trustworthiness of data over its life cycle.

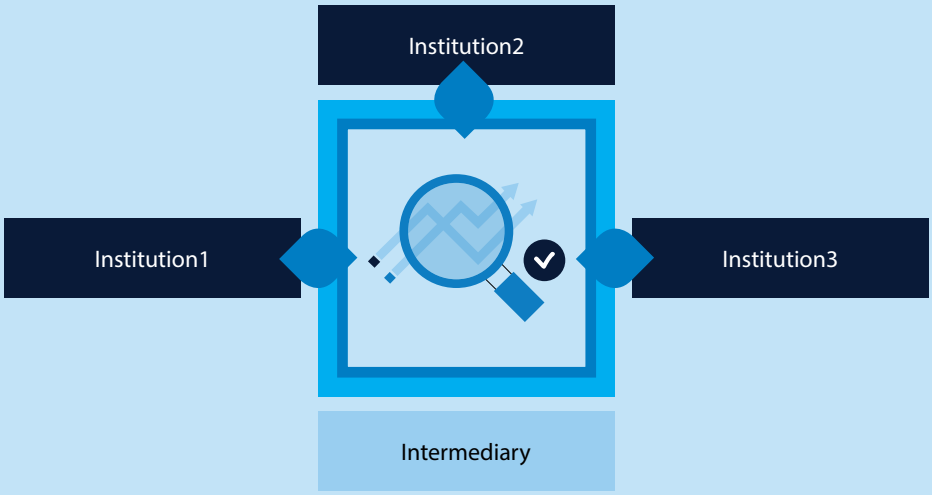
Availability – make sure that data is accessible at all times thereby ensuring minimum down time.

According to World Bank, average cost of remittance across the globe is 7.5%. Reducing this cost by even 5% would translate into a saving of $16 billion annually – the key is to reduce the number of intermediaries and payment channels.

Blockchain explored

Let us explore blockchain through a generalized asset transfer mechanism in Banking, Financial Services and Insurance.

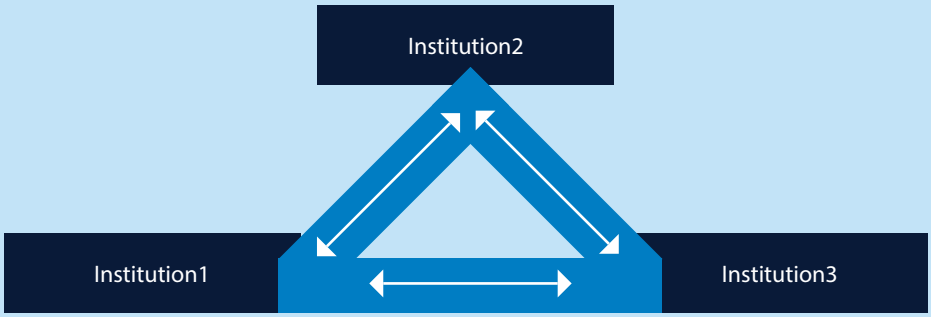
AS-IS Process:



Drawbacks of the current architecture:

- Multiple intermediaries (clearing houses, payment channels, etc.) hence additional cost
- Slow synchronization – transaction may take from a few hours to a couple of days
- Error prone and high risk due to multiple intermediaries

TO-BE Process:



Benefits of the proposed architecture through blockchain:

Saves time

Reduction in processing time by relaying transaction to all approving parties simultaneously which breaks the hierarchical chain. Similarly, the approvals is also captured in the ledger on a real-time basis.

Faster settlements through reduced duplicate record keeping and eliminating multiple reconciliation – hence reducing the time taken for decision making.

Reduces cost

Since it works on the principle of distributed ledger and consensus – saves reconciliation costs and reduces documentary frauds.

Reduces risk

Brings down the risks of cyber fraud, cybercrime and tampering.

Increases transparency through consensus, immutability, finality and provenance which results in increased network elasticity due to a high level of replication in the network.

Applications of Blockchain

Blockchain can have multiple applications across different sectors such as Banking, Financial Services and Insurance (Fx settlement, cross border payments, trade finance, OTC derivative contracts), Travel and Transportation (loyalty points program, booking records), CPG, Retail and Manufacturing (e-commerce, marketplace, home automation) and Technology and Media (media and usage rights, intellectual property).

In the era of globalization, industries are also getting increasingly interconnected with processes and benefits of one industry, easily scalable and acceptable to others. This makes the applications of blockchain multidimensional and irrefutable. Finance forms the backbone for any industry. Every industry needs to carry out some form of transaction in its product life cycle and money is involved in one or more functions of the product cycle. Let's explore the applications of blockchain with special reference to banking and finance in the below section.

Blockchain in Banking and Finance

Blockchain is the current buzzword in finance industry. The movement from a centralized infrastructure to a more distributed ecosystem is disrupting business models in payments, financial transactions, digital banking, etc. Global leaders are already experimenting with this (r)evolution.

Digital Currency

In order to anchor the benefits of this technology, digital versions of paper currency are being developed by central banks across the globe. R3CEV – a banking consortium start-up, Scotiabank and others have already lend their support for this cause.

An Estonian Bank based out of Tallinn, LHV Pank - became the first banking and financial services corporation globally to start trials with programmable money when it issued cryptographically-protected certificates of deposits.

Cards and Payments

Vulnerabilities in cross-border banking transactions is not new and banks across the globe have been targeted as victim to cyber-attacks. As stated earlier, distributed ledger will help make international payments faster, secure and easier. It will in turn also reduce or remove the number of 'trusted' third-party involvement. Payment can be verified without traversing through the full network.

Santander Bank's real-time international payments and foreign remittances is based on core technology provided by Ripple. Santander estimates that usage of blockchain by banks can reduce infrastructure cost by up to $20 billion/year. Since payments and settlement happen in real time, participating institutions need not keep a highly funded settlement account thereby reducing liquidity and operational costs.

Blockchain will facilitate integration of domestic payment networks to form a private but independent blockchain network for cross-country payments.

Blockchain will help facilitate a secure convergence between wearable's and IoT payments by integrating security of cards network with open convenience of internet.

P2P lending model has become the fastest growing model for consumer lending. Blockchain seems to be the technology to form the pillar of its growth. It will help bring transparency reducing counter party credit risk and daily settlement risk.

Blockchain will make social media payments such as Facebook credits and Twitter Pay safer leading to a higher adoption due to increased trust and confidence.

Blockchain will help bring down the cost structure of payment cards by directly connecting the unbanked with agencies and individuals. According to World Bank, approximately 2 billion people across the globe do not have a formal account with a financial institution. Shockingly, this is not only because of poverty, but also due to high cost and paper work involved.

MasterCard and Visa have already dived deep for creating a blockchain based payments platform to forge ahead of industry competition and increase customer acquisition. Blockchain can help modernize the rewards system so that inter-merchant transfer of points can be carried out more securely and quickly. Extending this further, customers will be able to transfer points between themselves and redeem – interoperability of points between banks, issuers and other businesses. Blockchain can also be used to analyse fraud patterns and stop reward thieves.

Markets

Cobalt DL is using blockchain for processing transactions in near-real time which eliminates multiple trade records across parties thereby reducing reconciliations in FX trade. Unpredictability in currency volatility is eliminated which leads to players getting the best deal from the market.

Capitals markets can leverage blockchain by reducing message exchanges between intermediaries such as exchanges, Central Counterparties, Central Securities Deposit, custodian, broker and investment bankers/ managers, thereby reducing delay and bringing down cost.

It will also act as a common repository eliminating the high number of KYC checks. SWIFT KYC Registry already has more than 2000 banks enrolled with it and is exploring the use of blockchain for integrating all the data required for KYC compliance in order to obtain a consolidated view of customer.

Trade Finance

Bank of America in partnership with Microsoft Treasury has announced a project to establish a trade finance application structure that can facilitate transactions between the companies.

Goldman Sachs and BAC have already started a patent war on Blockchain. BAC has already filed 15 patents related to blockchain and is in the process of drafting 20 more.

Regulations

With great power comes greater responsibility – bitcoin turned out to be the top performing 'currency' of 2016 rallying to levels of $1200+ and yet there is no legal structure in place for blockchain. Recently, the creator of Bitcoin has raced ahead to patent blockchain. If granted, this could change the entire landscape for this technology. There also needs to be a regulation in place to check the usage of blockchain in gambling.

Fool proofing blockchain would require a global legal framework recognizing it as valid regulatory registry to enable the technology to make the leap from a promise to an everyday reality.

Conclusion

Blockchain as a technology has caught attention globally - geeks and institutions alike, have started experimenting on its applications in order to gain a first mover advantage. It will transform financial institutions and the future landscape of many industries. As the technology evolves, the experience and applications will become more fulfilling. The current storm may just be the tip of the iceberg. The future will bring to the fore tremendous innovation in realizing the true potential and applications of this technology. Many educational institutions have already set up blockchain dedicated innovation labs to unpack the technology and develop proof-of-concepts. However, the adoption of blockchain could be hindered by the lack of business case to sustain investment and regulations which may reduce scope.

Don't fight disruption, embrace it

About the Author

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Pratik is a Senior Associate Consultant with more than three years of experience in implementing transformation projects across finance clients. He holds triple masters in management from Antwerp Management School - Belgium, Fordham University - New York and Xavier Institute of Management - Bhubaneswar.

References:

http://santanderinnoventures.com/wp-content/uploads/2015/06/The-Fintech-2-0-Paper.pdf

http://blogs.mindtree.com/blockchain-for-banks-an-implementation-guide

https://bitcoin.org/bitcoin.pdf

https://bitcoinmagazine.com/articles/indian-central-bank-research-institute-completes-blockchain-test/

https://hbr.org/2017/01/the-truth-about-blockchain

http://fortune.com/2016/05/08/why-blockchains-will-change-the-world/

http://www.ey.com/Publication/vwLUAssets/ey-blockchain-reaction-tech-companies-plan-for-critical-mass/$FILE/ey-blockchain-reaction.pdf?bcsi_scan_ac85d4f4ee253e53=0&bcsi_scan_filename=ey-blockchain-reaction.pdf

http://www.coindesk.com/blockchain-finance-buzzword-watchword-2016/

http://www.businessinsider.com/mastercard-pushes-ahead-into-blockchain-tech-2016-11?IR=T

https://letstalkpayments.com/blockchain-use-cases-comprehensive-analysis-startups-invoved/

https://remittanceprices.worldbank.org/sites/default/files/rpw_report_october_2015.pdf

http://docplayer.net/29935803-To-banking-and-financial-sector-in-india.html

https://www.brainyquote.com/quotes/quotes/s/sebastiant762077.html

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